

Atriplex coronata var. *notatior*
(San Jacinto Valley crownscale)

**5-Year Review:
Summary and Evaluation**



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**U.S. Fish and Wildlife Service/
Carlsbad Fish and Wildlife Office
6010 Hidden Valley Road
Carlsbad, California 92011-4213**

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5-YEAR REVIEW

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5-YEAR REVIEW

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1. GENERAL INFORMATION

1.1. Reviewers:

Lead Regional Office: Diane Elam and Jenness McBride, Region 8 (California and Nevada), (916) 414-6464.

Lead Field Office: Gary D. Wallace, Carlsbad Fish and Wildlife Office, (760) 431-9440.

Cooperating Field Office (s): Not applicable.

1.2. Methodology used to complete the review: This review was conducted by Gary D. Wallace at the Carlsbad Fish and Wildlife Office, U.S. Fish and Wildlife Service (Service). We relied on our 1998 listing rule, our proposed critical habitat designation, our final critical habitat designation, and reports and information in our files sent to us during the information request period, or obtained from interviews with individuals involved in surveys, research, or management of this plant. The species' status and threats at the time of listing are compared to current status and threats.

1.3. Background

1.3.1. FR Notice citation announcing initiation of this review: A notice announcing initiation of the five-year review for this species and the opening of a 60-day information request period was published in the Federal Register on March 22, 2006 (71 FR 14538). During that time period, we received one comment, and that recommended that the current listing status for this and several other species remain in place. Information received relevant to this review is addressed in this document, where appropriate.

1.3.2. Listing history

Original Listing

FR notice: 63 Federal Register 54975-54994.

Date listed: October 13, 1998

Entity listed: *Atriplex coronata* var. *notatior* (San Jacinto Valley crownscale), a plant variety.

Classification: Endangered

State Listing

This taxon is not listed by the State of California.

1.3.3. Associated rulemakings: In our proposed rule to designate critical habitat for *Atriplex coronata* var. *notatior* we identified 15,232 acres containing

features considered essential to the conservation and recovery of the plant (69 FR 59844, October 6, 2004). All habitat with essential features for this taxon is located either within our estimate of the areas to be protected and managed by the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) on existing Public/Quasi-Public Lands, or within areas where the MSHCP will ensure that future projects will not adversely alter essential hydrological processes. Therefore, we excluded all of this habitat under section 4(b)(2) of the Endangered Species Act of 1973, as amended (Act), in our final critical habitat rule (70 FR 59952, October 13, 2005). Thus, no critical habitat for this species is currently designated.

1.3.4. Review History: None

1.3.5. Species' Recovery Priority Number at start of five-year review: The recovery priority number for this plant is "3" according to the 2006 Recovery Data Call for the Carlsbad Fish and Wildlife Office. This indicates that this plant is a subspecies (subspecies and variety are considered equivalent ranks) facing a high degree of threats but having a high recovery potential.

1.3.6. Recovery Plan or Outline

Name of plan: Three southwestern California plants from vernal wetlands and clay soils.

Date issued: Under development.

Dates of previous revisions: No previous revisions.

2. REVIEW ANALYSIS

2.1. Application of the 1996 Distinct Population Segment (DPS) policy

2.1.1. Is the species under review a vertebrate? No. The Act defines species as including any subspecies of fish or wildlife or plants, and any distinct population segment (DPS) of any species of vertebrate wildlife. This definition limits listing as a DPS to vertebrate species of fish and wildlife. Because the taxon under review is a plant, the DPS policy is not applicable. Therefore, application of the DPS policy to the taxon's listing is not addressed further in this review.

2.2. Recovery Criteria

2.2.1. Does the species have a final, approved recovery plan containing objective, measurable criteria? No.

2.3. Updated Information and Species Current Status

2.3.1. Biology and Habitat

- **Information on the species' biology and life history:** *Atriplex coronata* var. *notatior* is a bushy, erect, annual plant that bears unisexual flowers on each plant. Plants are from 4 to 12 inches high (Taylor and Wilken 1993). The bracts that are fused around the single-seeded fruits have numerous tuberculate bumps on their outer surfaces. Plants usually flower in April or May and set fruit in May or June. Seeds may remain viable for more than five years. There is some information that the single-seeded fruits float (Sanders *in litt.* 2004). This would allow the fruits to be dispersed by the annual flood waters that inundate the habitat.
- **Spatial distribution, trends in spatial distribution (e.g., increasingly fragmented, increased numbers of corridors, etc.), or historic range (e.g., corrections to the historical range, change in distribution of the species' within its historic range, etc.):** At the time of listing, *Atriplex coronata* var. *notatior* was reported to be restricted to the San Jacinto, Perris, Menifee, and Elsinore Valleys near Perris in western Riverside County, California. In the listing rule we noted that 11 population centers were associated primarily with the San Jacinto River and Old Salt Creek tributary drainages with one additional small population to the southwest near Lake Elsinore. The spatial distribution of the plants in the landscape shifts over time as hydrological conditions (Roberts 1993). At the time of listing the plant was thought to occupy about 400 acres of the estimated 8,200 acres deemed suitable or marginal habitat (63 FR 54976).

San Jacinto Valley crownscale currently occupies the same general range that it did at the time of listing (Figure 1). Since the listing, we published a proposed rule (69 FR 59844) and a final rule (70 FR 59952) to designate critical habitat for *Atriplex coronata* var. *notatior* (no critical habitat was designated in the final rule). For our critical habitat proposal we prepared a map of 15,232 acres of habitat containing features deemed essential for *Atriplex coronata* var. *notatior* (69 FR 59844). This figure included watershed areas and agricultural lands not identified in the listing rule. Because of their close proximity, the known occurrences of this plant were grouped together into occurrence complexes (69 FR 59846). San Jacinto Valley crownscale is currently known from four occurrence complexes identified in the proposed critical habitat rule (69 FR 59846): 1) San Jacinto Wildlife Area/Mystic Lake (Figure 2); 2) Floodplain of the San Jacinto River between the Ramona Expressway and Railroad Canyon Reservoir (Ramona Expressway/Railroad Canyon) (Figure 2); 3) Upper Salt Creek Vernal Pool Complex (Salt Creek) (Figure 3); and 4) Alberhill Creek (Alberhill) (Figure 4).

The overall extent of the range of this plant has not changed appreciably since the listing. However, the spatial distribution within that range continues to be fragmented in time and space by non-agricultural and agricultural activities described below in sections 2.3.2.1. and 2.3.2.4.

- **Abundance, population trends (e.g., increasing, decreasing, stable), demographic features (e.g., age structure, sex ratio, family size, birth rate, age at mortality, mortality rate, etc.), or demographic trends:** This annual plant is subject to significant natural fluctuations in numbers of standing individuals in any given year. Numbers of individuals in an occurrence complex varies in response to annual rainfall, extent of winter flooding, and temperature (Roberts 1993). Differences in the survey methodologies and proportion of range surveyed may also contribute to differences in annual counts of individuals. San Jacinto Valley crownscale has a soil seed bank that may persist even though plants are removed or fail to germinate in a particular year (69 FR 59846). A seed bank generally consists of a portion of the seeds produced that naturally do not germinate in a given season when conditions are otherwise adequate to promote germination. The San Jacinto Valley crownscale soil seed bank persists within disturbed lands, including agricultural areas (70 FR 59965).

Population estimates have been calculated over multiple years within the 40-acre Upper Salt Creek Wetland Preserve. There were a total of 16,500 San Jacinto Valley crownscale plants in 1996, 6,200 plants in 1997, and 20,800 plants in 1998 on 6.5 acres; and 136,948 plants in 2001 on 12.5 acres (Amec Earth and Environmental, Inc. 2001). These figures demonstrate fluctuations in plant numbers over a period of years and estimates of the standing population in a given year may not provide a useful measurement of a population of San Jacinto Valley crownscale. There are fluctuations both in numbers of plants as well as area of occupied habitat.

We estimated that there were about 27,000 San Jacinto Valley crownscale individuals occupying about 145 acres of habitat at the time of listing (63 FR 54976). More recently the range-wide population was estimated to be 106,000 (Glen Lukos Associates 2000). The core of this Glen Lukos survey was an estimate of 84,000 plants on 236.5 acres along the San Jacinto River between the Ramona Expressway and the mouth of Railroad Canyon. This survey was conducted under the special circumstances of a two-year suspension of discing and manure dumping by the majority of landowners in the spring of 2000 (Roberts *in litt.* 2003, 2004). Because of the temporary cessation of discing, it is likely that more plants germinated and persisted in these areas than would otherwise be expected. Additionally, after the count was made, discing activities and manure dumping resumed that may have impacted as much as 70 percent of the estimated 84,000 plants on the site (Roberts *in litt.* 2004). We included population and habitat acreage estimates from Bramlet and White (2004) in our final critical habitat rule (which did not designate critical habitat for this species) (70 FR 59955). These included 115,544 plants on 9,141 acres of suitable habitat along the San Jacinto River, 51,996 plants on 1,200 acres in Upper Salt Creek, and 185 individuals on 160 acres at Alberhill. Unfortunately, these plant numbers are apparently derived from cumulative data from the 1990's for each site and as such provide no clear picture of the current status of the total population. However, these figures may indicate the relative size of each of the three population complexes.

Habitat conditions can limit the size and spatial extent of the population of San Jacinto Valley crownscale. For example, Roberts (*in litt.* 2004) mentions that in 1997 at a site along the San Jacinto River south of San Jacinto Avenue he found about 5,300 individuals. After suspension of discing and dumping in spring of 2000, Glen Lukos Associates (2000) found about 15,000 individuals at the site. In a more recent visit to the site after the resumption of discing and manure dumping in 2004, Roberts and Bramlet (Roberts *in litt.* 2004) were able to locate 2,000 to 3,000 individuals at the boundary of freshly dumped manure where some plants were partially buried under manure. They found no plants where Roberts had seen the 5,300 plants in 1997 and estimated that about two-thirds of the area on which Glen Lukos Associates (2000) had found the 15,000 plants was buried under manure as well. No follow-up surveys have been conducted to see if this population has remained at low numbers.

We are not aware of any reports regarding the fecundity or the seed bank dynamics of San Jacinto Valley crownscale. Information available since listing indicates that population fluctuations noted in the listing rule are still evident. We are not aware of any newly found or recently extirpated occurrences since the listing that significantly change the abundance figures for the species. The impacts noted above that occurred after the Glen Lukos Associates 2000 survey likely reduced input to the seed bank and that, in turn, may ultimately lead to a reduction in the numbers of individuals in the affected populations. However, decreases in population numbers associated with ongoing habitat fragmentation and degradation noted below may take a period of time to show a definitive trend.

As was the case at the time of listing, the numbers of individuals and the areas they occupy vary from year to year and likely depend, in part, upon conditions of climate and habitat.

- **Genetics, genetic variation, or trends in genetic variation (e.g., loss of genetic variation, genetic drift, inbreeding, etc.):** We are not aware of any paper published or information available since the listing that addresses this topic. *Atriplex coronata* var. *notatior* is monoecious. That is, plants bear separate male and female flowers on the same plant. Plants are wind-pollinated. Both of these features promote outcrossing for genetic exchange among plants.
- **Taxonomic classification or changes in nomenclature:** We are not aware of any paper published or new information available since the listing that proposes to change the name, the taxonomic status, or systematic position of *Atriplex coronata* var. *notatior*.

Habitat or ecosystem conditions (e.g., amount, distribution, and suitability of the habitat or ecosystem): San Jacinto Valley crownscale is restricted to seasonal wetlands, including floodplains and vernal pools that support alkali vernal plain, alkali playa, alkali scrub, and alkali grassland (Ferren *et al.* 1993, 1996). It is associated with slow-draining alkali soils including Willows, Domino, Traver, Waukena, and Chino Soils Series (70 FR 59964). The areas where this plant occurs are typically

flooded by winter rains and the water drains or evaporates over a variably extended period of time (63 FR 54976). The final critical habitat rule (70 FR 59965) stresses the importance of both local and large-scale flooding events to the reproduction, germination, and dispersal of San Jacinto Valley crownscale.

None of the four occurrence complexes where this taxon persists are pristine or undisturbed (Bramlet 1993, CNDDDB 2007). Although not stated as such, this was the condition at the time of listing. All four occurrence complexes have been or continue to be impacted by agricultural activities. Nevertheless, the wetland areas of these occurrence complexes and their associated hydrological processes continue to provide the biological and physical features necessary to sustain self-perpetuating populations of San Jacinto Valley crownscale.

Since listing, we acknowledged that the Ramona Expressway/Railroad Canyon occurrence complex that occupies the floodplain of the San Jacinto River has been severely degraded by the dumping of manure that alters the soil chemistry (70 FR 59965). Discing associated with agricultural practices has also had a significant impact on San Jacinto Valley crownscale habitat (Roberts *in litt.* 2003). In our final critical habitat rule, we also identified habitat degradation from agricultural activities, non-agricultural clearing activities, farming activities, and potential agricultural runoff as ongoing impacts to one or more of the four occurrence complexes (70 FR 59965).

2.3.2. Five-Factor Analysis (threats, conservation measures, and regulatory mechanisms)

2.3.2.1. Factor A: Present or threatened destruction, modification or curtailment of its habitat or range: In the final listing rule we estimated that about 75 percent of the 32,000 acres of historical habitat for San Jacinto Valley crownscale in the vicinity of Perris, western San Jacinto, and Menifee Valleys were impacted by a combination of intensive cultivation, urbanization, watercourse channelization, or by being filled or otherwise highly disturbed (63 FR 54983). A significant portion of the remaining 8,200 acres were reported to be impacted by dryland farming. Three pipeline projects had impacted San Jacinto Valley crownscale and another was proposed. Discing for weed abatement or fire control also impacted populations of the San Jacinto Valley crownscale (63 FR 54984). Proposed major commercial and residential development, transportation, and flood control projects were also noted as threats to San Jacinto Valley crownscale.

Development continues to be a threat to San Jacinto Valley crownscale in areas of all four occurrence complexes not currently identified as Public or Quasi-Public lands under the MSHCP. Although not yet approved, additional project proposals are expected in the future. The Alberhill occurrence complex north of Lake Elsinore was identified as threatened by urbanization and associated disturbance including alteration of hydrologic processes (70 FR 59966). Non-permittees, such

as utility companies and water districts, could propose additional projects, although we are not aware of any specific projects at this time.

Activities associated with the San Jacinto River Flood Control Project, including a proposed widening of the Ramona Expressway, could alter the hydrological processes and patterns that sustain San Jacinto Valley crownscale. Nearly all of the linear extent of the plants' distribution along the San Jacinto River in the San Jacinto Wildlife Area/Mystic Lake complex and the Ramona Expressway/Railroad Canyon complex could be affected (Bramlet *in litt.* 2004). Direct impacts could include a downstream decrease in the seasonal water, silt, and nutrient flows as well as the dispersal of the fruits of this species. Upstream impacts could include longer periods of inundation and shorter growing seasons. Similar impacts may result from proposed road realignment in the Salt Creek complex.

Habitat alteration for waterfowl ponds and off-highway vehicle (OHV) activity threaten San Jacinto Valley crownscale at the San Jacinto Wildlife Area/Mystic Lake occurrence complex. However, as noted in the final critical habitat rule, Paulek (*in litt.* 2005) states that the draft management plan for the San Jacinto Wildlife Area designated the habitat for San Jacinto Valley crownscale (Alkali Sink Scrub) as a Special Ecological Community. This draft plan provides for incorporation of impact analysis in future project environmental review procedures. However, this management plan is not yet finalized by the California Department of Fish and Game.

As indicated in the final critical habitat rule (70 FR 59965) and depicted in Figures 2, 3, and 4, all four of the occurrence complexes have been impacted by agricultural activities such as plowing, discing, and dry-land farming. The Salt Creek complex, in the area of west Hemet, is threatened by agricultural activities including dry-land farming, weed abatement and fire suppression activities, grazing, alteration of hydrology, habitat fragmentation, and a proposed road realignment (Dudek and Associates, Inc., 2003; 70 FR 59966). Roberts (*in litt.* 2003) reports the systematic discing on some sites adjacent to Interstate highway I-215 as many as four times a year. Frequent discing would likely suppress the development and reproduction of the seasonally flooded alkali plain vegetation, including San Jacinto Valley crownscale.

The Ramona Expressway/Railroad Canyon occurrence complex is threatened by non-agricultural clearing (e.g., for weed abatement), as noted in the final critical habitat rule (70 FR 59966). About 30 percent of the San Jacinto Valley crownscale plants found in a 6,000-acre study area along the San Jacinto River were in areas where at least some of the habitat elements were intact (Glen Lukos Associates 2000). The remaining plants were in areas that have been disced or plowed, and in some areas covered by manure or sludge. In these areas, habitat elements of micro-topography and associated species were found to be absent or greatly reduced (Glen Lukos Associates 2000).

Subsequent to the listing of *Atriplex coronata* var. *notatior* in 1998, we received information that starting in 1998 and persisting through 2001 there was an elevated level of manure (from dairy cattle) and sludge (variously treated sewage biosolids) dumping along the San Jacinto River between the Ramona Expressway and Railroad Canyon (Roberts *in litt.* 2003, 2004, 2005). Written information and imagery provided by Roberts (*in litt.* 2003, 2004, 2005) describe instances, methods, locations, and persistence of manure and sludge dumping on occupied habitat in and near Perris, Riverside County, California. The one public comment submitted for this five-year review also made reference to manure and sludge dumping in this area.

Trucks deposit manure and sludge in piles, which are dispersed in a layer on the soil surface and then later mixed with the soil, as a peer reviewer to our critical habitat proposal noted (69 FR 59844). Roberts (*in litt.* 2004) documented the persistence and magnitude of manure dumping, stating that the scale is on the order of thousands of tons. Roberts (*in litt.* 2004) included references to newspaper articles in 2001 referring to the application of over 1,000 tons of Class A and Class B (unrefined with regard to killing pathogens) sludge in the area. One article cited deposition of thousands of tons of Class B sludge on about 15,000 acres, mostly along the I-215 corridor between Temecula and Perris where there is some occupied habitat for San Jacinto Valley crownscale.

The layer of sludge and/or manure covers San Jacinto Valley crownscale plants and seed bank (Roberts *in litt.* 2003, 2004, 2005; Glen Lukos Associates 2000) and can likely alter hydrological patterns and soil conditions in flow areas outside of the footprint of the dump site. Manure and sludge also alter the alkali nature of the soil which in turn has enabled an apparent increase in invasive species such as *Salsola australis* (Russian thistle, tumbleweed) and *Brassica nigra* (mustard) that are less tolerant of alkali conditions (Roberts *in litt.* 2003, 2004).

The City of Hemet, a permittee under the Western Riverside MSHCP, has adopted two ordinances (City of Hemet Ordinance No. 1666 and 1742) designed to halt manure dumping within the City. However, the manure and sludge dumping described above by (Roberts *in litt.* 2003, 2004, 2005) occurred within the City of Perris and adjacent unincorporated portions of Riverside County. These areas are covered by the MSHCP.

Atriplex coronata var. *notatior* continues to face essentially the same threats attributable to this factor as it did at the time of listing, including habitat alteration, clearing, a flood control project, discing, plowing, manure and sludge dumping, dry-land farming, weed abatement, fire suppression activities, alteration of hydrology, road realignment, urbanization, and alteration of hydrological processes. Since the listing, the threat posed by the wide-spread dumping of manure and sludge has persisted and been quantified, as described above. Impacts associated with agricultural activities have not abated and most of the

threats attributable to this factor are associated with agricultural activities. Several of the activities described above could alter the direction, magnitude, and water quality of flood flows. The maintenance of clean seasonal water flows from surrounding watersheds as well as natural floodplain processes was identified as necessary for the conservation of all four of the occurrence complexes in our critical habitat rule (70 FR 59965).

Habitat and population protections afforded this taxon under the Western Riverside MSHCP that may alleviate the severity of some of the threats attributable to this factor are described below under 2.3.2.4.

2.3.2.2. Factor B: Overutilization for commercial, recreational, scientific, or educational purposes: The potential threat from unrestricted collection was noted in the listing rule (63 FR 54985). However, we have no evidence that this threat has been realized.

2.3.2.3. Factor C: Disease or predation: The threat from intensive sheep grazing was noted in the listing rule but in the context of animals trampling the plants (63 FR 54985). There are indications that sheep grazing in San Jacinto Valley crownscale habitat continues in the Ramona Expressway/Railroad Canyon complex (Brown pers. obs. 2007, CNDDDB 2007).

2.3.2.4. Factor D: Inadequacy of existing regulatory mechanisms: At the time of listing, regulatory mechanisms thought to have some potential to protect *Atriplex coronata* var. *notatior* included the California Environmental Quality Act (CEQA), conservation provisions under section 404 of the Clean Water Act, and the Endangered Species Act in cases where the species incidentally occurs in habitat occupied by a listed wildlife species. The final listing rule (63 FR 54975) provides an analysis of the level of protection that was anticipated from those regulatory mechanisms. This analysis appears to be currently valid. In the final listing rule, we agreed with a commenter to the proposed listing rule that the Act would continue to afford protections to this taxon if the Western Riverside MSHCP were not fully implemented.

The final listing rule noted the lack of adequate protection for the plant under the State of California's management of the San Jacinto Wildlife Area, which is managed for wetlands and waterfowl habitat. It is not clear how conflicts between management for waterfowl and protection of San Jacinto Valley crownscale will be resolved in the draft management plan for San Jacinto Wildlife Area mentioned by Paulek (*in litt.* 2005).

Atriplex coronata var. *notatior* has no designated critical habitat. We determined that the benefits of excluding lands covered by the Western Riverside County MSHCP, described below, outweighed the benefits of including them as critical habitat. Thus, we excluded lands pursuant to section 4(b)(2) of the Act. Because this excludes all areas of habitat with features essential to the species (i.e., areas

meeting the definition of critical habitat, and that are being protected and managed by the MSHCP), we designated zero acres of critical habitat for *Atriplex coronata* var. *notatior* in our final critical habitat rule (70 FR 59967).

Since San Jacinto Valley crownscale was listed, the Western Riverside County MSHCP was signed in 2004 (Dudek and Associates, Inc. 2003). The MSHCP establishes a multiple-species conservation program to minimize and mitigate the expected loss of habitat values and, with regard to “covered” animal species, the incidental take of such species as permitted under section 10 of the Act. The MSHCP Plan Area encompasses approximately 1.26 million acres in western Riverside County, including the entire range of *Atriplex coronata* var. *notatior*, which is a covered species under this plan. The Western Riverside County MSHCP is a subregional plan under the State’s Natural Community Conservation Planning (NCCP) program and was developed in cooperation with the California Department of Fish and Game and the Service. We concluded that the MSHCP would not jeopardize the continued existence of *Atriplex coronata* var. *notatior* in our Biological and Conference Opinion under section 7 of the Act (USFWS 2004).

The MSHCP has five species-specific conservation objectives for San Jacinto Valley crownscale populations. These objectives require Riverside County to: (1) include within the MSHCP Conservation Area at least 6,900 acres of suitable habitat (grassland, playas, and vernal pools within the San Jacinto River, Mystic Lake, and Salt Creek portions of the MSHCP Conservation Area; (2) include within the MSHCP Conservation Area the Alberhill Creek locality, as well as three Core Areas located along the San Jacinto River from the vicinity of Mystic Lake southwest to the vicinity of Perris and in the Upper Salt Creek drainage west of Hemet; and (3) conduct surveys for San Jacinto Valley crownscale as part of the project review process for public and private projects within the Criteria Area where suitable habitat is present. For locations with positive survey results, 90 percent of those portions of the property that provide long-term conservation value for the species will be avoided until it is demonstrated that the conservation objectives for the species are met. Other MSHCP objectives are: (4) include within the MSHCP Conservation Area the floodplain along the San Jacinto River consistent with objective 1 above; and (5) include within the MSHCP Conservation Area the floodplain along Salt Creek, generally in its existing condition from Warren Road to Newport Road and the vernal pools in Upper Salt Creek west of Hemet. Floodplain processes will be maintained along the river to provide for the distribution of the species to shift over time as hydrologic conditions and seed bank sources change. We anticipate that the MSHCP Conservation Area will be assembled over twenty-five years.

Processes that allow for Service oversight of MSHCP implementation include annual reporting requirements, joint review of projects proposed within the Criteria Area; participation on the Reserve Management Oversight Committee, and a Reserve Assembly Accounting Process. The Reserve Assembly

Accounting Process will be implemented to ensure that lands are conserved in rough proportionality to development, are assembled in a configuration as generally described in the MSHCP, and that conservation goals and objectives are being achieved. The Service is also responsible for reviewing “Determinations of Biologically Equivalent or Superior Preservation” that are proposed under the MSHCP’s “Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools” policy; and for reviewing minor amendment projects, such as the State Route 79 Realignment project and the San Jacinto River Flood Control project, for concurrence on consistency with the requirements of the MSHCP.

The MSHCP also provides for long-term management of the preserve areas and avoidance and minimization measures that provide benefit to the species and its supporting watersheds. Known San Jacinto Valley crownscale localities within the MSHCP Conservation Area will be monitored every eight years. Reserve managers are responsible for the maintenance and enhancement of floodplain processes on the San Jacinto River and Upper Salt Creek. Particular management emphasis will be given to preventing alteration of hydrology and floodplain dynamics, farming, fire and fire suppression activities, off-road vehicle use, and competition from nonnative plants.

All three of the proposed critical habitat units for San Jacinto Valley crownscale are within the Conservation Area of the Western Riverside County MSHCP (70 FR 59967). Approximately 77 percent (11,760 of the 15,232 acres) of habitat identified in the proposed critical habitat rule as essential to the conservation of San Jacinto Valley crownscale, but that were not finally designated as critical habitat, will be protected on Public and Quasi-Public and Additional Reserve Lands within the MSHCP area. This MSHCP area includes watershed areas necessary to maintain hydrological processes that are not modeled as suitable habitat for San Jacinto Valley crownscale (69 FR 59844).

In this discussion of the MSHCP the differences between acreages identified in MSHCP documents and those in our proposed critical habitat rule stem from two main factors. First, agricultural lands were excluded from the MSHCP model analysis even though they may support the plant and are restorable. Secondly, in our proposed critical habitat rule we included watershed areas of Old Salt Creek as essential to maintain hydrological processes even though these were not identified as suitable San Jacinto Valley crownscale habitat. In general, a greater area of occupied and potentially occupied habitat was identified by the methods used for our proposed critical habitat rule.

To assess the current status of San Jacinto Valley crownscale, a GIS analysis of available data was performed for this review using a habitat model that did not follow habitat criteria used by Dudek and Associates, Inc. (2003) for the MSHCP (USFWS 2005a). This analysis revealed the following information: There are 8,954 acres of modeled San Jacinto Valley crownscale habitat in the MSHCP plan area. Of those, 3,131 acres are Public and Quasi-Public lands and 4,167 acres are

Additional Reserve Lands. Areas of Additional Reserve Lands are expected to be added to the reserve system to connect existing reserves and Public and Quasi-Public lands. Since implementation of the MSHCP in 2004, 191 acres of modeled San Jacinto Valley crownscale habitat (67 acres of Additional Reserve Lands and 29 ac of Public and Quasi-Public lands) have been lost. There were 631 acres of gains of modeled San Jacinto Valley crownscale habitat. However, these gains were realized prior to implementation of the MSHCP in 2004. The gains consisted of 531 acres of Additional Reserve Lands of modeled San Jacinto Valley crownscale habitat and 92 acres of modeled San Jacinto Valley crownscale habitat outside of the Additional Reserve Lands and Public and Quasi-Public lands. Since the implementation of the MSHCP no modeled San Jacinto Valley crownscale habitat has been added to the reserve system.

All agricultural operations on parcels included on the Existing Agricultural Operations Database that do not require a County or City discretionary authorization will receive take authorization as existing agriculture without the need to comply with the Criteria or MSHCP mitigation requirements (USFWS 2004, Biological Opinion, FWS-WRIV-870.19 Carlsbad Fish and Wildlife Office). This would apply to most of the occurrence complexes identified in section 2.3.2.1. that support San Jacinto Valley crownscale. Take authorization will be applied to a limited number of new lands for agricultural operations (including expansion of existing agriculture not requiring a discretionary permit or authorization), or subsequently determined to be converted to agriculture use, after the effective date of the Implementing Agreement consistent with the goals of the MSHCP (“new agricultural lands”). Issuance of a “Certificate of Inclusion” or other written instrument must occur prior to take authorization. New conversions to agricultural use within the Criteria Area will be covered up to an established threshold of 10,000 acres over the life of the Permit issued in conjunction with the MSHCP. The proposed guidelines for coverage of new agricultural operations and mechanisms for implementing the new agricultural lands cap are discussed in Section 6.2.F of the MSHCP and Section 11.3.6 of the Implementing Agreement.

The San Jacinto River Flood Control Project, including widening of the Ramona Expressway, is a Covered Activity under the MSHCP.

Ultimately the MSHCP Conservation Area is expected to include a total of at least 6,900 acres of suitable San Jacinto Valley crownscale habitat assembled from each the three core areas and the Alberhill site. Known localities of San Jacinto Valley crownscale within the Conservation Area will be monitored every eight years. Particular management emphasis will be given to preventing alteration of hydrology and floodplain dynamics, farming, fire and fire suppression activities, off-road vehicle use, and competition from nonnative plant species.

Because there is no prohibition against take of listed plants on private lands, activities without a Federal nexus which might adversely impact the species or its

habitat would not require consultation with us. Sixty-seven percent of the lands identified in the proposed critical habitat rule as having features essential for the conservation of SJVC are privately owned. We considered these lands to be located either within our estimate of the areas to be protected and managed by the Western Riverside County MSHCP on existing Public/Quasi-Public Lands, or within areas where the MSHCP will ensure that future projects will not adversely alter essential hydrological processes.

To summarize, currently, of the 8,954 acres of modeled San Jacinto Valley crownscale habitat in the MSHCP plan area, 3,131 acres are Public and Quasi-Public lands. Since implementation of the MSHCP in 2004, there has been a loss of 191 acres of modeled San Jacinto Valley crownscale habitat but no gains of modeled habitat. The existing Public and Quasi-Public lands constitute less than half of the 6,900 acres of suitable habitat required for San Jacinto Valley crownscale mitigation under provisions of the MSHCP. In addition, most areas identified above in section 2.3.2.1. that are occupied by San Jacinto Valley crownscale are considered to be under agricultural use, a Covered Activity under the MSHCP. As such, these areas need not comply with the MSHCP mitigation requirements (USFWS 2004, Biological Opinion, FWS-WRIV-870.19, Carlsbad Fish and Wildlife Office). Permittees under the Western Riverside MSHCP are obligated to adopt and maintain ordinances or resolutions as necessary, and amend their general plans as appropriate, to implement the requirements and to fulfill the purposes of the MSHCP and its associated Implementing Agreement and Permit (see Implementing Agreement for the MSHCP, page 41). Other permittees should follow the City of Hemet's lead and enact ordinances prohibiting manure dumping, but they have not yet done so. Likewise, the San Jacinto River Flood Control Project is a covered activity requires a minor amendment, and if certain project specific criteria are not met, it requires a major amendment. This major amendment may be necessary because a population of thread-leaved brodiaea, a Federally threatened plant, required to be conserved under a project specific criterion was eliminated by manure dumping this year. This site also supported San Jacinto Valley crownscale. Thus, while some populations of this plant will receive some protection under provisions of the MSHCP, it could take twenty-five years to complete assembly of the Conservation Area. Meanwhile, during that time, impacts to San Jacinto Valley crownscale associated with Covered Activities may continue.

2.3.2.5. Factor E: Other natural or manmade factors affecting its continued existence: The listing rule (63 FR 54988) discusses the threat to San Jacinto Valley crownscale posed by the aggressive nonnative grasses such as *Crypsis schoenoides* (swamp grass, swamp timothy) seeded in as a food source for waterfowl, especially in the San Jacinto Wildlife Area.

San Jacinto Valley crownscale continues to be threatened by invasive nonnative plants. The occurrence complex in the floodplain along the San Jacinto River at the San Jacinto Wildlife Area/Mystic Lake is still threatened by invasive and

weedy plant species introduced as food sources for waterfowl (Bramlet 1996). As noted above in section 2.3.2.1., manure and sludge dumping has led to an apparent increase in invasive nonnative plants such as *Brassica nigra* (black mustard) and *Salsola traga* (Russian thistle) that would otherwise be lacking due to the naturally high alkalinity of the soil (Roberts *in litt.* 2004). The occurrence complex at Upper Salt Creek is likewise threatened by invasive nonnative plants (Bramlet 1993, CNDDDB 2007, Roberts and McMillan 1997).

2.4. Synthesis

The entire known range of *Atriplex coronata* var. *notatior* is in western Riverside County. The plant has a relatively narrow habitat range associated with alkali areas. The current geographical range is the same as it was at the time of listing. The current threats to this taxon are essentially the same as they were at the time of listing. Since the listing, manure and sludge dumping have been shown to be a significant threat to the species in certain areas of the Ramona Expressway/Railroad Canyon occurrence complex.

The Western Riverside County MSHCP, completed and signed since the listing, offers potential conservation benefit to San Jacinto Valley crownscale. The entire range of the plant is within the boundaries of the MSHCP. We believe that the MSHCP Conservation Area, to be assembled over twenty-five years, will protect approximately 77 percent (11,760 of 15,232 acres) of habitat identified as essential to the conservation of San Jacinto Valley crownscale on Public and Quasi-Public lands and Additional Reserve Lands within the MSHCP. The Act would continue to afford some protection to this plant if the Western Riverside County MSHCP were not fully implemented. Currently 3,131 acres (35 percent) of modeled San Jacinto Valley crownscale habitat in the MSHCP plan area are Public and Quasi-Public lands. Since implementation of the MSHCP, two percent of the modeled San Jacinto Valley crownscale habitat has been lost and none has been gained. Ongoing MSHCP covered activities, including agricultural activities, flood control, and highway and utility maintenance will likely continue to impact San Jacinto Valley crownscale.

When fully implemented, the MSHCP Conservation Area will include 6,900 acres of suitable habitat for San Jacinto Valley crownscale assembled from the three core areas and the Alberhill site. The 6,900 acres will constitute about forty-five percent of the 15,232 acres of habitat with features essential to the survival of the species we identified in our proposed critical habitat rule. Currently the 3,131 acres of Public and Quasi-Public lands noted above would constitute about 45 percent of this total goal.

The four known occurrence complexes of this plant are currently threatened by a variety of activities, especially by those associated with agricultural use (a Covered Activity that may continue under the MSHCP). Some occurrences are impacted by manure and sludge dumping (not a Covered Activity under the MSHCP). Alteration of the hydrological regime associated with highway widening (which is covered under the MSHCP) could imperil the occurrence complexes along the San Jacinto River. There are proposed developments for most areas not currently identified as Public or Quasi-Public lands

under the MSHCP. The conservation status of these areas is unknown.

Atriplex coronata var. *notatior* is a habitat specialist, known from four occurrence complexes with a range-wide population estimate of 106,000 plants in 2000. This annual plant relies on a dynamic hydrological regime. There are ongoing threats to all of the occurrence complexes that support the plant. The MSHCP will provide considerable conservation benefits to the species; however, assembly of the Conservation Area will take twenty-five years to complete. As yet less than half of the required acres have been preserved and none have been acquired since implementation of the MSHCP. We recommend that the current listing status for *Atriplex coronata* var. *notatior* remain unchanged as endangered.

3. RESULTS

3.1. Recommended Classification

No change in listing status is recommended at this time. Significant conservation provisions are presented in the Western Riverside County MSHCP. A portion of the modeled habitat is protected on Public and Quasi-Public lands within the MSHCP. However, it will take twenty-five years to assemble the Conservation Area and implement all of the species specific objectives for San Jacinto Valley crownscale. In addition, *Atriplex coronata* var. *notatior* is currently subject to all of the threats noted above.

- Downlist to Threatened**
- Uplist to Endangered**
- Delist** (*Indicate reasons for delisting per 50 CFR 424.11*):
 - Extinction*
 - Recovery*
 - Original data for classification in error*
- No change is needed**

3.2. New Recovery Priority Number 3 (no change)

4. RECOMMENDATIONS FOR FUTURE ACTIONS

Coordinate with MSHCP permittees, including the County of Riverside and the City of Perris, to improve habitat for this species through the use of ordinances that prohibit the dumping of manure and sludge within the MSHCP Criteria Area.

Coordinate with the Western Riverside Regional Conservation Authority to target acquisition of MSHCP Additional Reserve Lands in the areas where this species occurs, and to establish land management practices on these lands that will benefit the species.

Assess the extent and effectiveness of conservation of this plant under the MSHCP, and address the condition of the hydrological regimes at each of the four occurrence

complexes. Special attention should be afforded to this plant in the MSHCP annual review process because of the species narrow geographical and ecological range.

Determine the reproductive biology and population dynamics of San Jacinto Valley crownscale.

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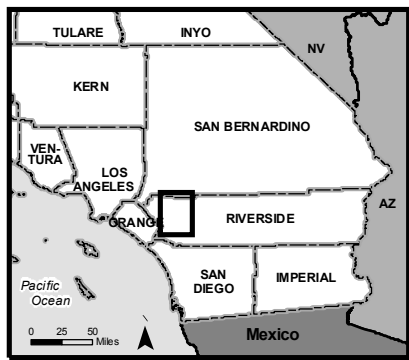
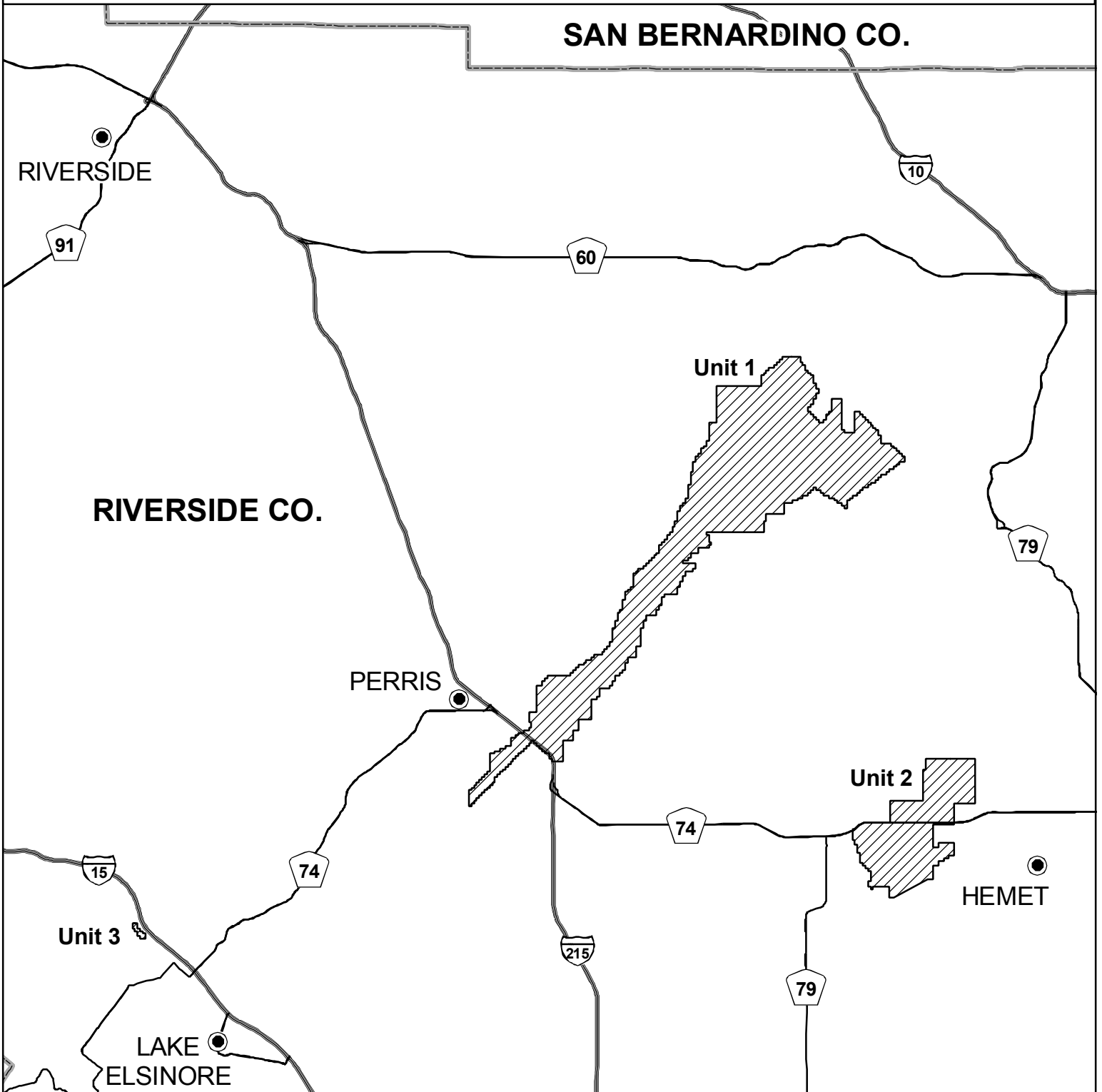
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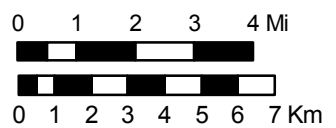
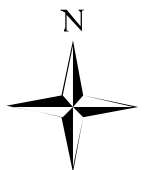
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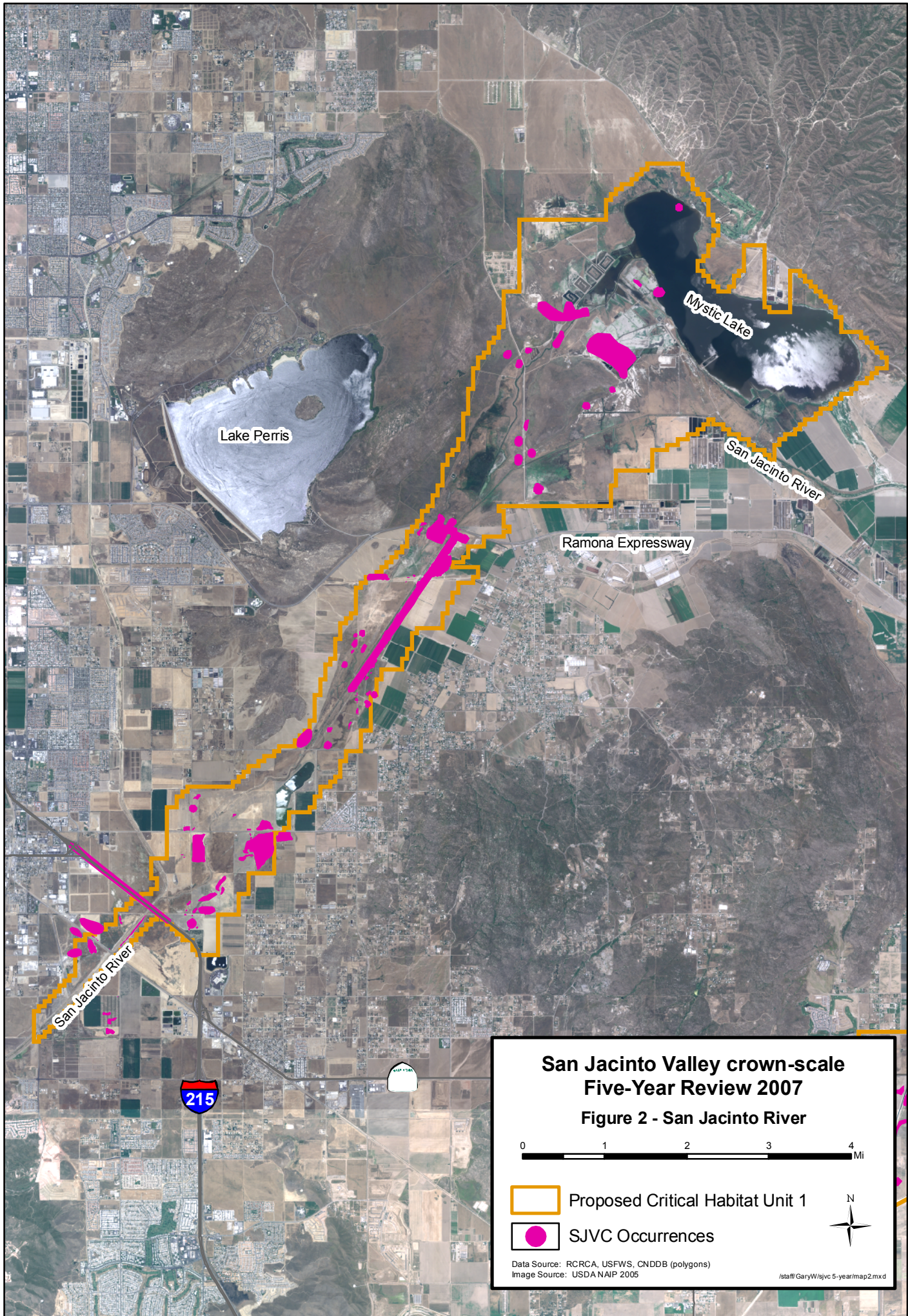
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**San Jacinto Valley crown-scale (*Atriplex coronata* var. *notatior*)
 Five-Year Review 2007, Riverside County, California - Figure 1**



-  Proposed Critical Habitat Unit
-  City
-  Interstate
-  Major Road
-  County Boundary





Lake Perris

Mystic Lake

San Jacinto River

Ramona Expressway

San Jacinto River

215

San Jacinto Valley crown-scale Five-Year Review 2007

Figure 2 - San Jacinto River

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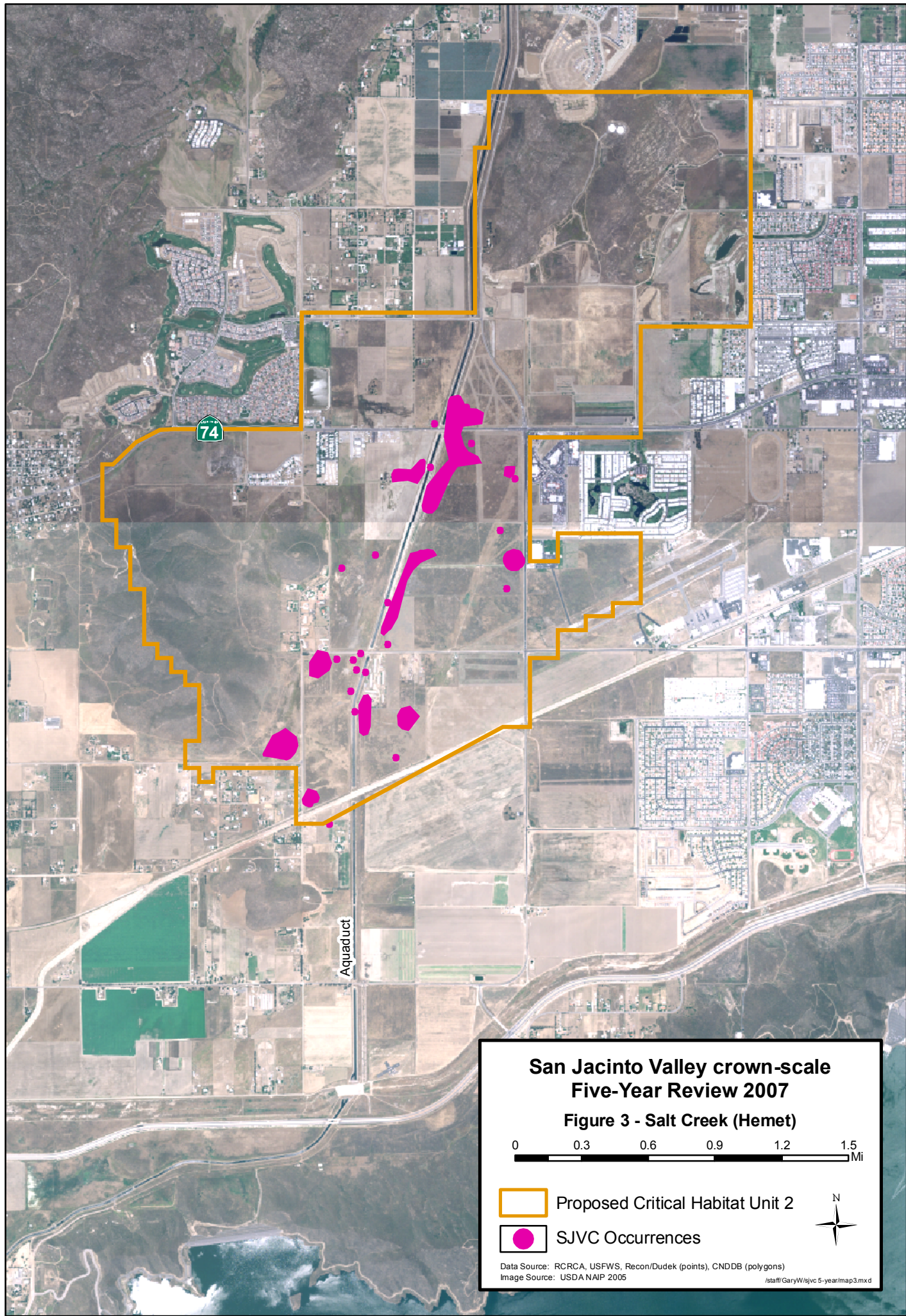
Proposed Critical Habitat Unit 1

SJVC Occurrences



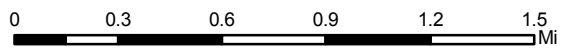
Data Source: RCRC, USFWS, CNDDDB (polygons)
Image Source: USDA NAIP 2005



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**San Jacinto Valley crown-scale
Five-Year Review 2007**

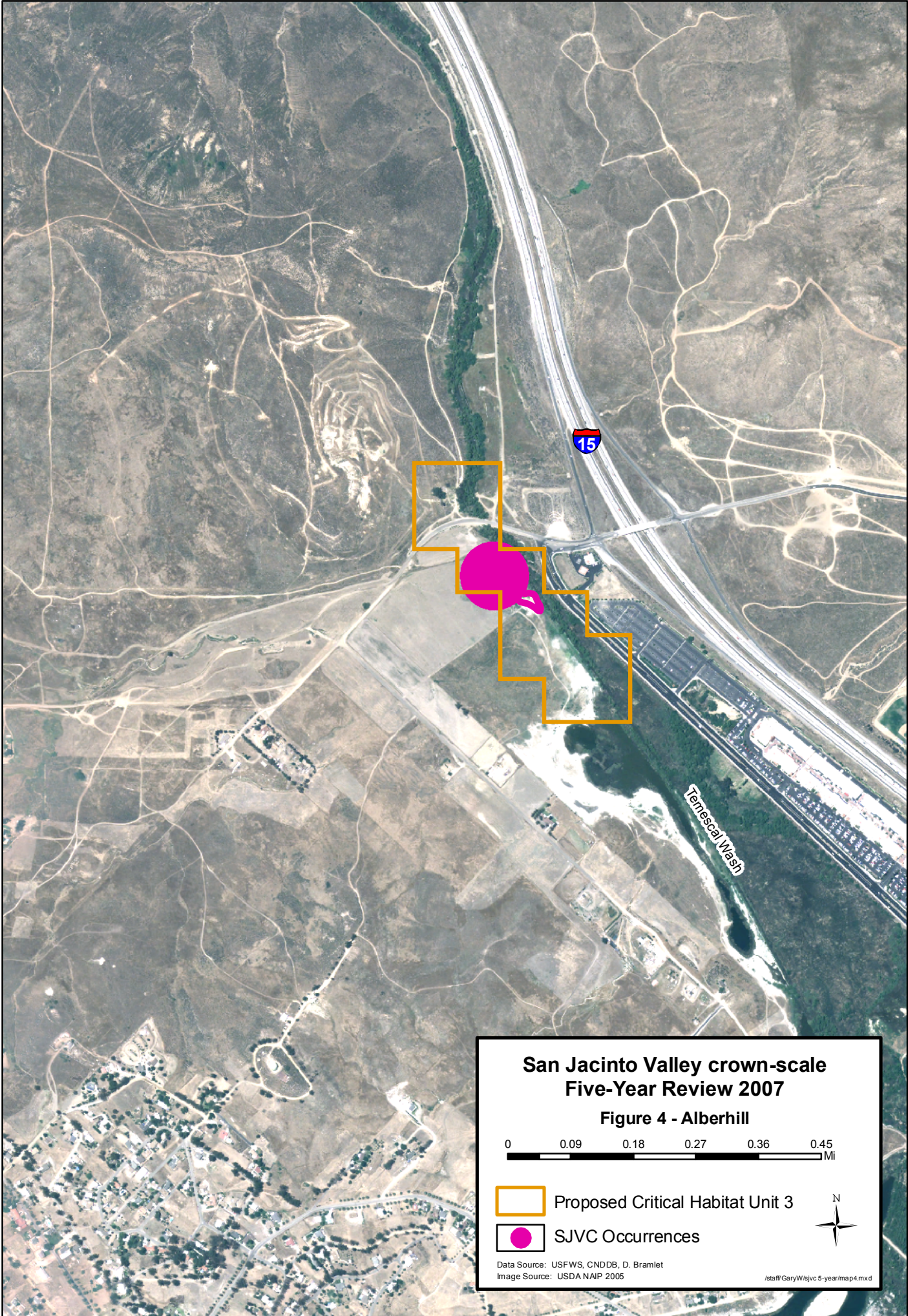
Figure 3 - Salt Creek (Hemet)



-  Proposed Critical Habitat Unit 2
-  SJVC Occurrences



Data Source: RCRC, USFWS, Recon/Dudek (points), CNDDB (polygons)
Image Source: USDA NAIP 2005
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**San Jacinto Valley crown-scale
Five-Year Review 2007**

Figure 4 - Alberhill



 Proposed Critical Habitat Unit 3

 SJVC Occurrences



Data Source: USFWS, CNDDb, D. Bramlet
Image Source: USDA NAIP 2005

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